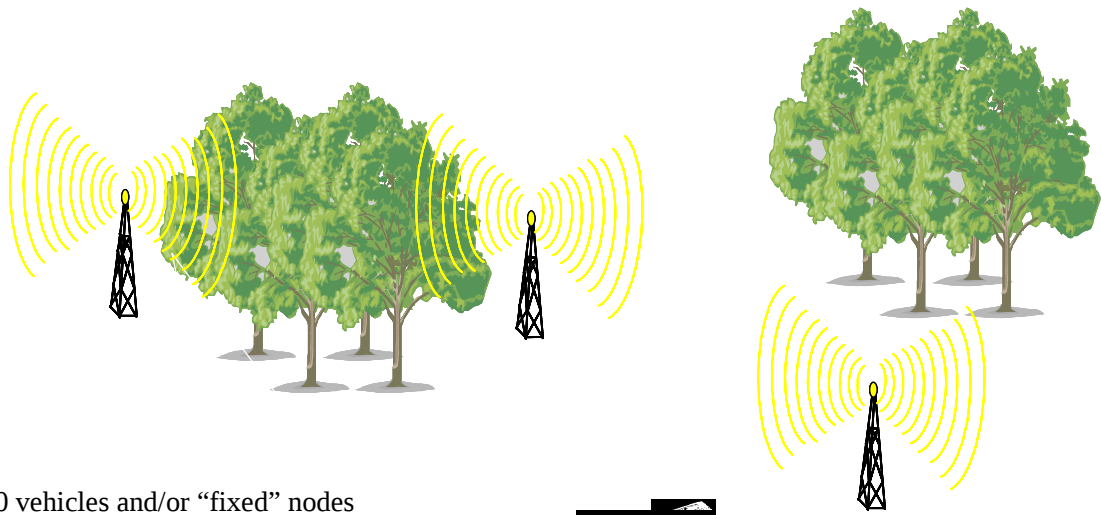


Exhibit #1 for FCC Form 422 for FCS PerceptOR Testing



Upto 20 vehicles and/or “fixed” nodes
6w power amplifiers at all nodes
Antenna <6 meters AGL on all nodes
Antenna gain on all vehicles 8dB
Locations: Fort AP Hill, Virginia
within a 5km radius



ATV w/ COTS Radio

Exhibit #2 to FCC Form 422 for FCS PerceptOR Experimentation

The Defense Advanced Research Projects Agency (DARPA) is engaged in a Perception for Off Road Robots (PerceptOR) program developing prototype approaches to advance the state-of-the-art for off-road obstacle detection for robotic systems and enable higher levels of autonomous mobility needed for Army Future Combat Systems (FCS) operations. The robotic systems envisioned for FCS must be able to operate with minimal human intervention while navigating in a variety of off-road terrains and weather conditions. Perception approaches utilizing sensor data are expected to yield significant improvements in obstacle avoidance in off road or complex urban conditions. DARPA and the U.S. Army will use the PerceptOR technologies and experimental data to make determinations regarding the practical utility of ground robots for FCS.

This license is being requested to support the testing of the PerceptOR technologies. The ground based PerceptOR Vehicles (i.e. ATVs) will communication to each other and to a command center via fixed ground based network access points, diagrammed in Exhibit #1. The testing of the PerceptOR systems will be performed beginning in August 2001 and continue through May 2002 at Ft. AP Hill. The RF communications links are to test

the PerceptOR prototype systems and are not being developed to support a fielded military system. Once PerceptOR systems reach a mature state and begin fielding to support military systems military radio systems will be utilized. This request is for testing and experimentation of PerceptOR systems using COTS radios to facilitate a more rapid turnaround and ease of integration.

- Up to 20 vehicles and/or fixed relay locations
- 6w power amplifiers would be used on all vehicles and fixed relay locations
- Antenna < 6meters AGL on all vehicles and fixed relay locations
- All antennas have a gain of 8 dB
 - o Azimuth beamwidth = 360 degrees
 - o Elevation beamwidth = 20 degrees
- Locations:
 - o Fort AP Hill
 - Within a 5km radius